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PERSICA (Pliny, Theophr.) Tabernaemontanus, Auguillara Lacuna, Gerard, Camerarius, Tragus, Fuchs, Hist, 205a (1549). *Persicus* Palladius, *Persicum* T. Gaza. 1529 *Malum persicum* Pliny, 13: 19. *Persica* Tour. Elem. 496 (1694), I. R. H., 624 (1700). *Persica* Duham. Arb., II, 105. (1755).

(T be continued.)

UNIONIDAE WITH ABNORMAL TEETH.

BY SAM. W. GEISER.

The following brief list, notes, and partial bibliography, is given as a contribution to the scanty literature dealing with this phase of molluscan life and teratology.

In the years 1908-1911, the writer collected a considerable amount of molluscan study-material, from the various rivers of the northeastern part of the state of Iowa, particularly in Buchanan, Fayette, Clayton, Allamakee, and Winneshiek Counties. In the summer of 1913, the waters of a number of other rivers in Iowa were examined.

It is surprising to find how large a percentage, *relatively*, of the mollusks of this group are either abnormal, or in some way diseased, *in certain restricted localities*, while one may go over, carefully, a large number of shells from other stations, without finding any teratologic specimens. All but one of the specimens noted came from the Wapsipinicon river near Independence, Iowa. Briefly listed, they are:

SHELL WITH ONE PSEUDOLATERAL IN EACH VALVE:

Lampsilis luteola, ♂, 4 years old, ♀, 5 years old.

Lampsilis ventricosa, ♀, 6 years; w. 3 pseudocardinals in right valve, sex? 2 yrs.¹

LATERALS OF BOTH VALVES FLATTENED:

Lampsilis ventricosa, ♂, 12-15 yrs. (Cardinals gone by dental caries.)

NO PSEUDOCARDINALS IN RIGHT VALVE:

Lampsilis luteola, ♂, 6 yrs.

¹ See in this connection THIS JOURNAL, Vol. II, pp. 65-67, 1911.

THREE PSEUDOCARDINALS IN RIGHT VALVE:

Lampsilis ventricosa, ♀, 6 yrs., (1 lateral in left valve); ♀
10-12 yrs.

Lampsilis luteola ♂, 6 yrs.

A study of the frequency of occurrence of diseased and abnormal freshwater mussels seems to indicate:

That certain weak-toothed genera, like *Symphynota* and *Alasmodonta* have very rarely abnormalities of any kind.

That, in the order of frequency of occurrence, the Anodontoid genera and *Lampsilis ventricosa* and *Lampsilis luteola*, are commonly affected by trematode parasites, which disfigure the shells internally.

That the presence of garbage, especially sewage, in the water apparently conduces to the well-being of these parasites, while anodontoid shells from clear ponds are in very many cases entirely free, as a community, from these parasites.

In certain of the most common and widely distributed genera and species, especially *L. luteola* and *L. ventricosa*, the teeth are often defective through what has been called "dental caries," in which the horny material of the ligament and periostracum has replaced the shelly substance of the hingearea.

Quadrula, *Pleurobema*, and similar genera with heavy shell and teeth, are, as a rule, generally normal.

AN ANNOTATED PARTIAL BIBLIOGRAPHY, ARRANGED CHRONOLOGICALLY, OF PAPERS ON THE SUBJECT.

LEA, ISAAC. *Description of a New Genus of Naiades*. Tr. Am. Phil. Soc., 1829, III: 403-457, 8 plates. [1830]. At page 428, pl. viii, fig. 11, is described *Unio heterodon* (= *Alasmodonta heterodon* (Lea) Simpson,) from the Schuylkill. The species is very variable, as the laterals in each valve may be single, double or triple.

CONRAD, TIMOTHY A. *Descriptions of New Fresh-Water and Marine Shells*. Jl. Acad. Nat. Sci. Phila., 1850, pp. 275-278, 2 plates. At p. 276, pl. xxxvii, fig. 7, may be found description of *Unio contrarius* (= *Lampsilis contraria* (Conr.) Simpson). The locality, (Ogeechee River, Georgia,) Simpson considers doubtful, and opines that this species may be simply a small male specimen with reversed laterals.

AGASSIZ, LOUIS [Communication on Abnormal Shells] Proc.

Boston Soc. Nat. Hist. VII: 166-167, [1859]. He exhibited a reversed *L. ligamentina*.

LEA, ISAAC. [*Communication on Reversed Unios*]. Proc. Acad. Nat. Sci. Phila., 1860, pp. 51-53. A very interesting paper—worth attention. A list is given of the teratologic specimens in Dr. Lea's cabinet.

KEYES, CHARLES R. *An Annotated Catalogue of the Mollusca of Iowa*. Bull. Essex Inst., XX: 61-83, (1889). Notes the collection of a number of specimens, but gives no records.

SIMPSON, CHARLES T. *The Classification and the Geographical Distribution of the Pearly Fresh-Water Mussels*. Proc. U. S. Nat. Mus., XVIII: 295-843, w. pl. ix. Observations on margaritanoid genera, (p. 303), *Margaritana monodonta*, (p. 304), *Dalliella purpurea*, (pp. 304-305), and *Symphynota compressa*, as well as others, are interesting, in this paper. SIMPSON's *Synopsis of the Naiades, or Pearly Fresh-Water Mussels*, (Proc. U. S. Nat. Mus., XXII: 501-1044, (1900)), contains also many scattered notes on dental variation.

A paper by the present writer, already referred to in footnote. [1911].

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RECORDS OF ADVENTIVE PLANTS.

Among the plants which as far as I have been able to find have not as yet been recorded from our region the following may be of interest. *Conringia orientalis* (Linn.) Dumort., was found along the Michigan Central R. R. at Notre Dame. Quite a number of plants were seen so that it may be considered as part of our flora. Rather more important would appear to be the presence of *Grindelia squarrosa* (Pursh) Dunal. It was found in an alfalfa patch about one mile from Hudson Lake in Laporte County. A considerable number of plants were apparently well established. The most eastern record according to the manuals is Illinois, but it seems to be working its way eastward, being probably introduced with alfalfa seed. *Matricaria matricarioides* (Less.) Porter (*Matricaria discoidea* DC.) has been established at Notre Dame for many years along walks and on the campus where it reappears annually. It is native of the Pacific coast.—J. A. N.

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